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Sidebars

Super Hornet Tactical Aircraft Trainer Suits U.S. Navy's Priorities

by Sandra I. Erwin

The availability of bright, clear, out-the-window imagery in the U.S. Navy's new tactical aircraft simulator will make the training experience more realistic than with any previous device, according to the trainer's manufacturer.

L-3 Communications Link Simulation and Training division, in Arlington, Texas, delivered the first F/A-18E/F Super Hornet flight simulator to the Navy last July. The company recently was awarded a $36.5 million contract from the Boeing Company to build and upgrade flight simulators as part of the F/A-18 Super Hornet low-rate initial production (LRIP) program.

Link will build three new F/A-18F tactical operational flight trainers (TOFT), in addition to upgrading previously delivered versions of the F/A-18F TOFT and F/A-18F weapons tactics trainer (WTT) to the latest F/A-18F aircraft configuration.

Deliveries of the new F/A-18F TOFTs will take place during 2001 and early 2002, said company officials. Upgrades to the existing trainers also are scheduled for completion in early 2002.

The F/A-18F trainers will be housed at Naval Air Station Lemoore, in Calif. They are designed to assist Navy aircrews to hone their air-to-air combat skills, by interacting with simulated adversaries. To enhance their air-to-ground mission skills, aircrews will be able to use the trainers to counter simulated surface-to-air missiles, antiaircraft artillery and early warning radar sites. Aviators also will practice simulated precision weapons delivery on various land and sea-based structures, including buildings, bridges, trucks,

trains and ships. The simulators also will be used to practice field and carrier takeoffs and landings, low altitude flight, emergency procedures and operation of radar imagery and targeting forward looking infrared displays.

The F/A-18 TOFT fits within a squadron office environment, according to Link officials.

Gary Nesta, the company's vice president for training devices, said the new F/A-18 Super Hornet trainer fit in a "reasonable footprint, a 10th of the footprint of the old F/A-18 WTT with the big domes."

They are "easy to take down and move," Nesta said. "So they have some level of deployability. They can be moved in a matter of days or weeks."

These trainers' display systems are "scalable," Nesta said. They rely on the company's SimuSphere product, a five-facet dodecahedron display. That system provides out-the-window visual scenes over a 300-degree horizontal by 70-degree vertical field-of-view. The F/A-18F WTT, which is integrated with a 40-foot dome display, offers aircrews a 360-degree field-of-view, said Nesta.

The same physical structure can have anywhere from a single panel display to a 360 degree field of view, he explained. The E/F model is being delivered with a 360 degree view and can go to a full dome. But it does not require more than a 13-foot high ceiling. "It provides the field of view they need to train at lower cost than the dome," Nesta said.

SimuSphere is a dodecahedron panel (a solid with 12 plane faces). Nine dodecahedron panels are needed to get a 360-degree dome. The cockpit sits inside the dome. The projectors are on the outside of the panels, projecting in. "We put the Navy in an environment where they own a three-to-five panel configuration and they could grow up to nine for 360-degree field of view," he said.

These trainers, according to Nesta, cost one-fifth of the price of a conventional dome. They will be used to train both beginner and experienced pilots. Because the Super Hornet is a new aircraft, "few people have been trained" so far, he said.

The original contract for this trainer was awarded in 1996, by Boeing. Nesta declined to provide dollar figures for that contract. In addition to the two trainers already delivered, Link is under contract to build three more.

The SimuSphere technology also is being used in the Air Force F-22 flight training system, which Link also is producing. The F-22 trainer delivery is scheduled for the first quarter of fiscal year 2003, Nesta said.